XII. Transportation Security

Federal Guidance

The metropolitan transportation plan should include appropriate emergency relief and disaster preparedness plans and strategies and policies that support homeland security and safeguard the personal security of all motorized and non-motorized users.

One of the federal planning factors is to increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and non-motorized users.

Federal guidance includes:

- Review current statewide and metropolitan transportation plans for emergency planning/security elements.
- Incorporate the transit System Security Program Plan (required for rail systems) into the MTP.
- Define the role of the public transportation operators/MPO/state in promoting security.
- Identify critical facilities and transportation system elements (transit system, rails, intermodal facilities, the interstate system, NHS routes, and STRAHNET routes).
- Develop security goals and appropriate strategies.

Role of the Metropolitan Planning Organization (MPO) and the Plan in Transportation Security

The terrorist events of September 11, 2001 provide a good illustration of the challenges facing metropolitan areas in preparing for and responding to unexpected security incidents or natural disasters. Although the immediate organizational response to security incidents and disasters will be the responsibility of security/public safety agencies, there is an important role that metropolitan planning organizations (MPOs) can play in promoting coordinated planning in anticipation of unexpected events or natural disasters. In addition, the MPO could also provide a centralized location of information on transportation system conditions and local/national responses that might be useful in an emergency.

Some major considerations for transportation security and the role of the MPO and this MTP include:

- Building consensus among many federal, tribal, state and local agencies over time for the most appropriate role for this MPO in security/disaster planning.
- Because of its role as a forum for cooperative decision making in a metropolitan area, and its responsibility for allocating financial resources to improving the performance of the transportation system, the MPO has a role to play in security/disaster planning.
- The role of the MPO is likely to vary by stage of the security/disaster incident.

Characterizing the nature of the threat.

The September 11, 2001 terrorist incidents focused attention on large scale, area wide responses to sudden attacks. There is a wide range of such incidents that could cause varying levels of disruption to the surface transportation system. The U. S. Department of Transportation originated a vulnerability assessment list that characterized the nature of the threats in four broad categories (see Table 1 below).

Table XII-1: Scenarios Considered in the U.S. DOT Vulnerability Assessment

Physical Attacks	
• Car bomb at bridge approach • Series of small explosives on highway bridge • Single small explosive on highway bridge • Single small explosive in highway tunnel • Car bomb in highway tunnel • Series of car bombs on adjacent bridges or tunnels • Bomb(s) detonated at pipeline compressor stations • Bomb detonated at pipeline storage facility • Bomb detonated on pipeline segment • Simultaneous attacks on ports • Terrorist bombing of waterfront pavilion • Container vessel fire at marine terminal • Ramming of railroad bridge by maritime vessel	• Attack on passenger vessel in port • Shooting in rail station • Vehicle bomb adjacent to rail station • Bombing of airport transit station • Bombing of underwater transit tunnel • Bus bombing • Deliberate blocking of highway-rail grade crossing • Terrorist bombing of rail tunnel • Bomb detonated on train in rail station • Vandalism of track structure and signal system • Terrorist bombing of rail bridge • Explosives attack on multiple rail bridges • Explosive in cargo of passenger aircraft
Biological Attacks	
• Biological release in multiple subway stations • Anthrax release from freight ship	• Anthrax release in transit station • Anthrax release on passenger train
Chemical Attacks	
• Sarin release in multiple subway stations	• Physical attack on railcar carrying toxics
Cyber and C^3 Attacks	
• Cyber attack on highway traffic control system • Cyber attack on pipeline control system • Attack on port power/telecommunications	• Sabotage of train control system • Tampering with rail signals • Cyber attack on train control center

Terrorist attacks and many natural disasters are sudden and without notice. Without knowing where, when, or how an attack is likely to occur, the most effective response strategy is for authorities to develop flexible strategies that can be adjusted quickly and appropriately to the type of incident that actually occurs. This type of strategy requires management coordination, compatible communication systems, and real time information feedback to decision makers that permits near immediate changes in strategy when required. This approach also requires mechanisms for disseminating information to the general public that provides the most up-to-date guidance on the best transportation options for avoiding bottlenecks in the transportation system.

Approaches to handling potential security/disaster incidents can be divided into six elements or phases:

1. Prevention
2. Response
3. Mitigation
4. Monitoring
5. Recovery
6. Investigation
7. Institutional learning

The MPO can undertake actions in each of these phases of a security/disaster incident that will benefit the region. In many cases, existing disaster evacuation plans are a good starting point and may be sufficient for the types of incidents anticipated.

Recently, the FHWA and many other groups have been looking closely at institutional strategies for providing metropolitan-level coordination of transportation system operations. In particular, the role of the MPO in such coordination has been the topic of much discussion. Five potential roles include:

1. Traditional: the MPO incorporates system management and operations (M&O) role in its ongoing transportation planning activities. The focus would be on specific M&O projects that arise as part of the transportation planning process, but the primary responsibility for operations-type projects would rest elsewhere, most likely with the NMDOT and the member governments' operations agencies.
2. Convener: the MPO would act as a forum where operations plans could be discussed and coordinated with other plans in the region. Regular meetings on operations issues would be held, but the MPO would still not be responsible for developing a regional operations plan.
3. Champion: the MPO works aggressively to develop a regional consensus on operations planning. MPO planners work with operating agencies to create programs and projects that improve system performance. The MPO takes the lead in developing regional agreements on coordinated operations.
4. Developer: the MPO would develop regional operations plans in addition to incorporating operations strategies into the transportation plan. System-oriented performance measures would be used to identify strategic operations gaps in the transportation system.
5. Operator: the MPO would be responsible for implementing operations strategies that were developed as part of the MPO-led planning process.

These five potential roles for MPOs in transportation systems management and operations show increasing levels of involvement and responsibility. It is not likely that many MPOs would adopt the last role, that is, act as the implementer of operations strategies, although such a role has been adopted by a very limited number of MPOs for very specific strategies. Given the strong influence of security/public safety/emergency management agencies in dealing with security and disaster incidents, it is likely that the most appropriate role for this MPO will be found in the first two or three described above. In particular, some MPOs have focused on funding better communications technologies in that can be used for a coordinated response to future incidents.

MPO Roles Relating to Phases of Security/Disaster Incidents

Given the MPO's strengths in technical analyses and transportation planning, the actions that seem most appropriate for the MPO in the context of security/disaster planning are:

- Conducting vulnerability analyses on regional transportation facilities and services
- Analyzing the transportation network for redundancies in moving large number of people and for strategies dealing with "choke" points and bottlenecks
- Analyzing the transportation network for emergency route planning/strategic gaps in the network

Given the MPO's responsibilities for funding strategies and projects that will improve the performance of the transportation system, the actions that seem most appropriate for the MPO in the context of security/disaster planning are:

- Funding new strategies/technologies/projects that can help prevent attacks
- Funding and perhaps coordinating regional transportation surveillance systems that can identify potential danger prior to its occurring
- Funding communications systems and other technology to speed response to an incident
- Funding recovery strategies

Given the MPO's role as a forum for cooperative decision making, the actions that seem most appropriate for the MPO in the context of security/disaster planning are:

- Providing a forum for security/safety agencies to coordinate surveillance and prevention strategies
- Coordinating with security officials in development of prevention strategies
- Providing a forum for discussions on coordinating emergency response
- Coordinating public information dissemination strategies
- Acting as a forum for developing appropriate recovery strategies
- Coordinating the stockpiling of strategic road/bridge components for rapid reconstruction
- Coordinating changes to multi-agency actions that will improve future responses

One of the more interesting and perhaps critical roles that the MPO can play is in the institutional learning phase of a security/disaster incident. In the phase, the MPO can collect relevant information on the manner in which the region responded to the incident, not on the official response in terms of the movement of emergency and public safety vehicles, but also how the public reacted and the strategies adopted by travelers in responding to any disruption. With this data, the MPO and other agencies can analyze the recent incident response to develop improved strategies for handling the next incident. The MPO is in a unique position to adopt a lead role in this institutional learning phase of a security/disaster incident.

Table XII-2: Possible MPO Roles in Security/Disaster Incident Stages

Stage of Incident	**Possible MPO Role**
Prevention	• Funding new strategies/technologies/projects that can help prevent events • Conducting vulnerability analyses on regional transportation facilities and services • Secure management of data and information on transportation system vulnerabilities • Providing forum for security/safety agencies to coordinate surveillance and prevention strategies • Fund and perhaps coordinate regional transportation surveillance system that can identify potential danger prior to its occurring • Coordinate drills and exercises among transportation providers to practice emergency plans • Coordinate with security officials in development of prevention strategies • Hazardous route planning • Disseminate (and possibly coordinate) research on structural integrity in explosion circumstance and standard designs
Mitigation	• Analyzing transportation network for redundancies in moving large numbers of people (e.g., modeling person and vehicle flows with major links removed or reversed, accommodating street closures, adaptive signal control strategies, impact of traveler information systems), strategies for dealing with “choke” points such as toll booths) • Analyzing transportation network for emergency route planning/strategic gaps in network • Providing forum for discussions on coordinating emergency response • Disseminating best practices in incident-specific engineering design and emergency response to agencies • Disseminating public information on options available for possible response • Funding communications systems and other technology to speed response to incident
Monitoring	• Funding surveillance and detection systems • Proposing protocols for non-security/safety agency response (e.g. local governments) • Coordinating public information dissemination strategies • Funding communications systems for emergency response teams and agencies
Recovery	• Conducting transportation network analyses to determine most effective recovery investment strategies • Acting as a forum for developing appropriate recovery strategies • Funding recovery strategies • Coordinate stockpiling of strategic road/bridge components for rapid reconstruction
Investigation	• Providing any data collected as part of surveillance/monitoring that might be useful for the investigation
Institutional Learning	• Acting as forum for regional assessment of organizational and transportation systems response • Conducting targeted studies on identified deficiencies and recommending corrective action • Coordinating changes to multi-agency actions that will improve future responses • Funding new strategies/technologies/projects that will better prepare region for next event

Security Issues for the Albuquerque Metropolitan Planning Area

The MPO coordinated with federal, state, and local security and emergency management agencies to identify existing plans and critical transportation security issues and concerns. In the development of this plan, consultation was made with the U. S. Transportation Security Administration’s Highway Watch Program, the New Mexico

Office of Homeland Security published goals and objectives, Bernalillo County All-Hazard Emergency Operations Plan (May 2005), the City of Rio Rancho Revised Emergency Management Plan (November 2001), as well as MPO staff participation in a statewide Transportation Security Awareness videoconference with several federal, state, and local security and emergency response agencies.

Threats to sensitive sites are continuously evaluated in many security forums, but to protect these sites, they are not included in this public document.

Identified regional or catastrophic threats in this metro area are a nuclear explosion and earthquakes. Localized threats include conventional explosions, hazardous materials spills or accidents, and forest fires in the bosque and in the Cibola National Forest in eastern Bernalillo County.

Major issues related to transportation planning and projects for future consideration in the Albuquerque metro area include:

- Emergency operations plans for the New Mexico Railrunner Express and heavy technical rescue that may be required for rail emergencies.
- Variable message signs as part of the Intelligent Transportation System (ITS) projects for emergency warning, evacuation instructions and Amber Alerts.
- NMDOT Motorist Assistance Patrols on the interstates.
- Pre-established long-distance rally points beyond the metro area in case of mass evacuation. These rally points will likely require fuel, water, shelter, medical support, vehicle maintenance, and family rendezvous information.
- Transit system as a critical evacuation element.
- The National Defense Medical System, including use of AMTRAK and coordinating routes between aviation facilities and hospitals.
- Trucking companies' "Truckers Watch" program for observing and reporting on unusual highway activities.
- Hazardous cargo routes, including Waste Incineration Pilot Program routes.
- ITS Operations Center potential role as a back-up emergency operations center.
- Evacuation of "special needs" people: elderly and retirement home residents, hospital patients, home care patients, those residents and visitors without personal automobiles.
- Ramp closures during evacuations. Lessons learned from some hurricane evacuations indicate that more ramps require closing than police are available to close them off, especially if "reverse direction flows' are implemented on freeways. One potential strategy is to invest in gates that can close off ramps to freeways.
- Understanding emergency management plans and roles, including the Federal Agency Continuity of Operations Planning, New Mexico Homeland Security plans, the Bernalillo County All-Hazard Emergency Operations Plan, and other county and municipal emergency operations plans.
- Understanding the roles of Non-governmental Organizations (NGOs), such as the Red Cross and Animal Rescue organizations.
- Coordinating planning with other agencies, including the Alliance for Transportation Research Institute (ATRI) security planning efforts.

References:

FHWA/FTA Clarifying Guidance on Implementation of SAFETEA-LU Planning Provisions, U. S. Department of Transportation, Federal Highway Administration, March 20, 2006

The Role of the Metropolitan Planning Organization (MPO) In Preparing for Security Incidents and Transportation System Response, Michael D. Meyer, Ph.D., P.E., Georgia Institute of Technology